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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/549,500	09/14/2005	Jiamin Jin	SHA 135NP	7743
23995 7590 04/08/2008 RABIN & Berdo, PC 1101 14TH STREET, NW SUITE 500 WASHINGTON, DC 20005				
EXAMINER				
DUONG, THANH P				
ART UNIT		PAPER NUMBER		
1797				
MAIL DATE		DELIVERY MODE		
04/08/2008		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/549,500

**Applicant(s)**

JIN ET AL.

**Examiner**

TOM P. DUONG

**Art Unit**

1797

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SF 298)  
Paper No(s)/Mail Date 8/30/06
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1-3 and 5-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Harada et al. (5,427,601).

Regarding claim 1, Harada et al. discloses a porous metallic honeycomb substrate (Col. 4, lines 21-49) for automotive exhaust gas cleaning catalysts in which the substrate is a column sintered (Col. 10, lines 59-68) from metal grains (Col. 9, lines 51-68) and there are many connected micro-pores between the grains (Col. 10, lines 59-68) and many through-holes between the two end faces of the column (Col. 4, lines 40-49) .

Regarding claim 2, Harada et al. discloses that the porous metallic honeycomb substrate for automotive exhaust gas cleaning catalysts which metal grains are made of heat resistant alloys (Col. 9, lines 52-68).

Regarding claims 3 and 6, Harada et al. discloses the diameter of metal grains is 5-80 or 30-50  $\mu\text{m}$  (Col. 13, lines 64-68).

Regarding claims 5 and 7, Harada et al. discloses that the number of through-holes in the column is 200-600 per square inch (Col. 13, lines 44-58).

2. Claims 1-3 and 5-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Hampton et al. (5,487,865).

Regarding claim 1, Hampton et al. discloses a porous metallic honeycomb substrate for automotive exhaust gas cleaning catalysts in which the substrate is a column sintered from metal grains and there are many connected micro-pores between the grains and many through-holes between the two end faces of the column.

Regarding claim 2, Hampton et al. discloses that the porous metallic honeycomb substrate for automotive exhaust gas cleaning catalysts which metal grains are made of heat resistant alloys.

Regarding claims 3 and 6, Hampton et al. discloses the diameter of metal grains is 5-80 or 30-50  $\mu\text{m}$ .

Regarding claims 5 and 7, Hampton et al. discloses that the number of through-holes in the column is 200-600 per square inch.

3. Claims 1-2 and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by Sugino et al. (4,582,677).

Regarding claim 1, Sugino et al. discloses a porous metallic honeycomb substrate for automotive exhaust gas cleaning catalysts in which the substrate is a column sintered from metal grains and there are many connected micro-pores between the grains and many through-holes between the two end faces of the column.

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Regarding claim 2, Sugino discloses that the porous metallic honeycomb substrate for automotive exhaust gas cleaning catalysts which metal grains are made of heat resistant alloys.

Regarding claim 4, Sugino discloses the apparent density of the substrate is 0.5-2.0 g/cm<sup>3</sup>.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Harada et al. '601 in view of Sugino et al. (4,582,677).

Harada et al. essentially discloses the features of the claimed invention and Harada appears to disclose the apparent density of the substrate of the claimed invention being the fact that Harada et al. discloses that the porosity and material composition can be changed depending on the application; thus, the apparent density can also be optimized thru routine optimization.

In any event, Sugino et al. teaches that it is conventional to produce the porous metallic honeycomb structure with the apparent density of the claimed invention (Col. 4, lines 50-60)

Thus, it would have been obvious in view of Sugino et al. to one having ordinary skill in the art to optimize the structure of Harada et al. to obtain the apparent density as taught by Sugino et al. since the apparent density can be optimized thru routine optimization. See *In re Boesch*, 617 F.2d. 272, 205 USPQ 215 (CCPA 1980). It has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art (*In re Aller*, 105 USPQ 233). Note, applicant has not disclosed criticality of the claimed range; thus, it would have been a matter of engineering choice to one having ordinary skill in the art to fabricate the device with the proper apparent density to meet the specific application.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TOM P. DUONG whose telephone number is (571)272-2794. The examiner can normally be reached on 8:00AM - 4:30PM (IFP).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Tom P Duong/  
Patent Examiner, Art Unit 1797